

CURRICULUM VITAE: NOAH TODD ASHLEY
formerly Noah Todd Owen-Ashley

ADDRESS:

Department of Biology
Western Kentucky University
1906 College Heights Blvd #11080
Bowling Green, KY 42101-1080
E-mail: noah.ashley@wku.edu

EDUCATION:

University of Washington. Ph. D. (Zoology) 2004
Advisor: John C. Wingfield
Dissertation Title: Environmental Regulation of Immune-Endocrine
Phenomena in Songbirds

Colby College, Waterville, ME. Bachelor of Arts, Biology 1997
Summa cum laude

EMPLOYMENT:

Assistant Professor, Dept. of Biology
Western Kentucky University 2012-present

Postdoctoral Researcher, Dept. of Neuroscience
The Ohio State University College of Medicine
Advisor: Dr. Randy Nelson 2011-2012

Affiliate Assistant Professor, Dept. of Biological Sciences
University of Alaska, Anchorage 2009-2010

National Science Foundation Postdoctoral Fellow
University of Alaska, Anchorage & Univ. of California, Berkeley
Advisors: Dr. Loren Buck and Dr. George Bentley 2009-2010

Wildlife Biologist, Department of Wildlife Management, North Slope Borough 2006- 2008
* Staff Biologist examining impacts of oil field development on ecology
and physiology of arctic-breeding birds and mammals

Research Assistant, Department of Zoology, University of Washington 1999-2004
• Developed and conducted experiments involving avian ecology
and physiology (see Research Experience below).

Teaching Assistant, Department of Zoology, University of Washington 1998-2002

- Instructed undergraduate-level biology courses (See teaching experience)

Field Assistant, Archbold Biological Research Station, Florida	1997
Research Assistant, Smithsonian, Washington, D. C.	1996
Teaching Assistant, Colby College, Waterville, Maine	1994-1997

FELLOWSHIPS AND GRANTS

NSF IOS (\$964,058)	2016-2021
RCAP I Award (internal grant, WKU; \$11,269)	2015
KBRIN-IDeA Award (\$105,000)	2013-2015
RCAP I Award (internal grant; WKU; \$15,000)	2013
KBRIN start-up award (\$25,000)	2012
NSF Polar Programs Postdoctoral Fellowship (\$140,000)	2009-2010
National Petroleum Reserve-Alaska Impact Grant (Co-PI; \$323,000)	2007-2009
International Behavioral Ecology Travel Award (\$1000)	2004
NSF Dissertation Improvement Grant (\$9,388)	2003-2005
SICB Division of Comparative Endocrinology Travel Award (\$400)	2003
Marcia Brady Tucker Travel Award (\$600)	2002
American Ornithologists' Union (AOU) Research Grant (\$1,780)	2002
Society of Integrative and Comparative Biology (SICB) Research Grant (\$1000)	2001
Sigma-Xi (\$800)	2001
NSF Predoctoral Fellowship (\$60,000)	1999-2001

HONORS AND AWARDS:

Lancaster Professor, WKU	2015
Junior Investigator Award, WKU	2015
Chair, Zoology Division, Kentucky Academy of Sciences	2014
Junior Investigator Award, WKU	2014
Certificate of Excellence in Reviewing, General & Comparative Endocrinology	2013
North Slope Science Initiative, Appointed Staff Member	2007-2008
Aubrey Gorbman Award, Best Student Presentation, Society for Integrative and Comparative Biology	2004
Richard Snyder Vertebrate Zoology Award, University of Washington	1999
Biology Senior of the Year, Colby College	1997
Charles A. Dana Award, Colby College	1996
Julius Seeyle Bixler Award, Colby College	1995
Phi Beta Kappa Award	1995

PUBLICATIONS (* indicates undergraduate student authorship). H index = 13.

Ashley, N.T., Brown, A. C*, Sams, D.W.*, and Dumaine, J. E. 2016. Novel environment influences the effect of paradoxical sleep deprivation upon brain and peripheral cytokine gene expression. Neuroscience Letters 615:55-59.

- Dumaine, J. E., and **Ashley, N. T.** 2015. Acute sleep fragmentation induces tissue-specific changes in cytokine gene expression and increases serum corticosterone concentration. American Journal of Physiology: Regulatory, Integrative and Comparative Physiology 308:R1602-9.
- Ashley, N. T.**, Ubuka, T., Schwabl, I. Goymann, W., Salli, B. *, Bentley, G. E., and Buck, C. L. 2014. Revealing a circadian clock in captive arctic-breeding songbirds, Lapland longspurs (*Calcarius lapponicus*), under constant illumination. Journal of Biological Rhythms 29:456-69.
- Ashley, N. T.**, Walton, J. C., Haim, A., Zhang, N., Prince, L. A. *, Fruchey, A. M.,* Lieberman, R. A.,* Weil, Z. M., Magalang, U. J., Nelson, R. J. 2013. Sleep deprivation attenuates cytokine gene expression independent of photoperiod and circulating cortisol in endotoxin-challenged male Siberian hamsters. Journal of Experimental Biology 216:2581-6.
- Ashley, N. T.**, Schwabl, I., Goymann, W., and Buck, C. L. 2013. Keeping time under the midnight sun: behavioral and melatonin profiles of free-living Lapland Longspurs (*Calcarius lapponicus*) during the Arctic summer. Journal of Experimental Zoology Part A. 319:10-12.
- Ashley, N. T.**, Weil, Z. M., and Nelson, R. J. 2012. Inflammation: mechanisms, costs, and natural variation. Annual Review of Ecology, Evolution, and Systematics. 43:385-406.
- Ashley, N. T.**, Zhang, N., Weil, Z. M., Magalang, U., Nelson, R. J. 2012. Photoperiod alters the duration and intensity of non-REM sleep following immune challenge in Siberian hamsters (*Phodopus sungorus*). Chronobiology International. 29:683-692.
- Ashley, N. T.** and J. C. Wingfield. 2012. Sickness Behavior in Vertebrates: Allostasis, Life History Modulation, and Hormonal Regulation. In: G. E. Demas and R. J. Nelson, eds. *EcoImmunology*. Pp. 45-91. Oxford University Press.
- Ashley, N.T.**, Barboza, P. S., Macbeth, B. J., Janz, D. M., Cattet, M. R. L., Booth, R. K., Wasser, S. K. 2011. Glucocorticosteroid concentrations in feces and hair of captive caribou and reindeer following adrenocorticotrophic hormone challenge. General and Comparative Endocrinology 172:382-391.
- Ashley, N.T.**, Hays, Q. R*, Bentley, G. E., and J. C. Wingfield. 2009. Testosterone treatment diminishes sickness behavior in male songbirds. Hormones and Behavior 56:169-176.
- Owen-Ashley, N. T.**, D. Hasselquist, L. Raberg, and J. C. Wingfield. 2008. Latitudinal variation of immune defense and sickness behavior in the White-crowned Sparrow (*Zonotrichia leucophrys*). Brain Behavior and Immunity 22:614-625.

- Owen-Ashley, N. T.** and J. C. Wingfield. 2007. Acute phase responses of passerines: characterization and seasonal variation. Journal of Ornithology 148 (Suppl 2):S583-S591
- Owen-Ashley, N. T.** and J. C. Wingfield. 2006. Seasonal modulation of sickness behavior in free-living song sparrows (*Melospiza melodia morphna*). Journal of Experimental Biology 209:3062-3070.
- Owen-Ashley, N. T.**, M. Turner*, T. P. Hahn, and J. C. Wingfield. 2006. Hormonal, behavioral, and thermoregulatory responses to bacterial lipopolysaccharide in captive and free-living Gambel's White-crowned Sparrow (*Zonotrichia leucophrys gambelii*). Hormones and Behavior 49:15-29.
- Owen-Ashley, N. T.** and L. K. Butler (Authors contributed equally). 2004. Androgens, interspecific competition and species replacement in hybridizing warblers. Proceedings of the Royal Society of London. Series B. 271:S498-S500.
- Owen-Ashley, N. T.**, Hasselquist, D., and J. C. Wingfield. 2004. Androgens and the immunocompetence handicap hypothesis: unraveling direct and indirect pathways of immunosuppression in song sparrows. American Naturalist 490-505.
- Wingfield, J. C, **N.T. Owen-Ashley**, Z.M. Benowitz-Fredericks, S.E. Lynn, T. P. Hahn, H. Wada, C. Breuner, S. L. Meddle, and L.M Romero. 2004. Arctic spring: the arrival biology of migrant birds. Acta Zoologica Sinica 50:948-960.
- Meddle, S. L., **N. T. Owen-Ashley**, M. I. Richardson, and J. C. Wingfield. 2003. Modulation of the hypothalamic-pituitary-adrenal axis in the polygynandrous Smith's Longspur (*Calcarius pictus*). Proceedings of the Royal Society of London. Series B 270:849-1856.
- Breuner, C. W., M. Orchink, T. P. Hahn, S. L. Meddle, I. T. Moore, **N. T. Owen-Ashley**, T. S. Sperry, and J. C. Wingfield. 2003. Mechanisms for plasticity of the stress response in three subspecies of white-crowned sparrow. American Journal of Physiology: Regulatory, Integrative, and Comparative Physiology 285:R594-R600.
- Owen-Ashley, N. T.**, S. J. Schoech, and R. L. Mumme. 2002. Context-specific response of Florida Scrub-Jay pairs to Northern Mockingbird vocal mimicry. Condor 104:858-865.
- Owen-Ashley, N. T.** and Wilson, D. E. 1998. *Micropteropus pusillus*. Peter's Dwarf Epauletted Fruit Bat. Mammalian Species. No. 577:1-5.

PRESS COVERAGE:

- Owen-Ashley, N. T.** and J. C. Wingfield. 2006. Seasonal modulation of sickness behavior in free-living song sparrows (*Melospiza melodia morphna*). J. Exp. Biol. 209:3062-3070.

Science magazine: <http://sciencenow.sciencemag.org/cgi/content/full/2006/804/2>

Owen-Ashley, N. T and L. K. Butler. 2004. Androgens, interspecific competition and species replacement in hybridizing warblers. Proc. R. Soc. Lond. B. S498-500.s

Reuters: <http://www.reuters.com/newsArticle.jhtml?type=topNews&storyID=6067047>

Los Angeles Times: <http://www.latimes.com/news/nationworld/nation/la-sci-briefs28.4aug28,1,5029276.story>

Newswise: <http://www.newswise.com/articles/view/506700/>

MSNBC: <http://www.msnbc.msn.com/id/5809902/>

Environmental News Network (ENN): http://www.enn.com/news/2004-08-25/s_26687.asp

Ashley, N. T., Schwabl, I., Goymann, W., and Buck, C. L. 2013. Keeping time under the midnight sun: behavioral and melatonin profiles of free-living Lapland Longspurs (*Calcarius lapponicus*) during the Arctic summer. Journal of Experimental Zoology Part A. 319:10-12.

Dugdug: <http://www.dugdug.com/dr-noah-ashley-discusses-timekeeping-in-the-arctic>

Commentary on Circadian Rhythms in Birds (July 2013):

National Geographic: <http://news.nationalgeographic.com/news/2013/06/130618-circadian-rhythm-arctic-bird-migrating-science/>

PUBLISHED ABSTRACTS

Owen-Ashley, N. T., L. K. Butler, S. Rohwer, and J. C. Wingfield. 2002. The role of testosterone in a moving avian hybrid zone. Annual Meeting of the Society for Integrative and Comparative Biology, Anaheim, California, USA, January 02-06, 2002

Owen-Ashley, N. T., Q. Hays*, G. E Bentley, and J. C. Wingfield. 2003. Testosterone reduces sickness behavior in songbirds. Annual Meeting and Exhibition of the SICB (Society for Integrative and Comparative Biology), Toronto, ON, Canada, January 04-08, 2003

Owen-Ashley, N. T., D. Hasselquist, and J. C. Wingfield. 2003. Indirect mechanisms of testosterone-induced immunosuppression in songbirds: A new paradigm. Annual Meeting and Exhibition of the SICB (Society for Integrative and Comparative Biology), Toronto, ON, Canada, January 04-08, 2003

Owen-Ashley, N. T., M. Turner*, T. P. Hahn, and J. C. Wingfield. 2004. Hormonal, behavioral, and thermoregulatory consequences of lipopolysaccharide-induced sickness in the White-crowned Sparrow (*Zonotrichia leucophrys gambelii*). Annual Meeting and Exhibition of the SICB (Society for Integrative and Comparative Biology), New Orleans, LA, USA, January 05-09, 2004.

Owen-Ashley, N. T., and J. C. Wingfield. 2004. Seasonal differences in expression of sickness behavior after experimental 'pseudoinfection' in free-living song sparrows (*Melospiza melodia morphna*). Annual Meeting and Exhibition of the SICB (Society for Integrative and Comparative Biology), New Orleans, LA, USA, January 05-09, 2004.

Owen-Ashley, N. T., D. Hasselquist, and J. C. Wingfield. 2005. Examining the indirect effects of testosterone-induced immunosuppression in songbirds. I.) Effects of corticosterone and estradiol on acquired immune function. Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), San Diego, CA, January 4-8, 2005.

Owen-Ashley, N. T., D. Hasselquist, and J. C. Wingfield. 2005. Examining the indirect effects of testosterone-induced immunosuppression in songbirds. II.) Effect of pharmacological adrenalectomy on humoral immune responses in testosterone-implanted birds. Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), San Diego, CA, January 4-8, 2005.

Salli, B.*, **Ashley, N. T.**, Buck, C. L. 2011. Effect of testosterone on the synchronization of activity rhythms to low amplitude zeitgebers in an arctic-breeding songbird. Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology)

Ashley, N.T., Zhang, N., Weil, Z. M., Magalang, U. J., Nelson, R. J. 2013. Sleeping dwarfs: photoperiodic modulation of infection-induced sleep in Siberian hamsters (*Phodopus sungorus*). Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), San Francisco, CA, January 3-7th, 2013.

Brown, A.C.*, Sams, D. W.*, **Ashley, N. T.** 2013. Sleep deprivation increases cytokine gene expression and plasma corticosterone levels in a murine model: a possible link between stress and inflammation? Kentucky Academy of Sciences Annual Meeting, Morehead, KY, Nov. 8-9, 2013.

Ashley, N.T., and Wingfield, J. C. 2014. Testosterone at the Top of the World: Disparate hormone-behavior interrelationships between two high-arctic breeding populations of Lapland Longspurs (*Calcarius lapponicus*). Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), Austin, TX, January 3-7th, 2014.

Ashley, N.T., Hasselquist, D., and Wingfield, J. C. 2015. Testosterone and immunosuppression in an arctic-breeding songbird. Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), West Palm Beach, FL, January 4-8th, 2015.

Cooper, L. N, and **Ashley, N. T.** 2016. Effects of sleep disruption upon cytokine gene expression of zebra finch (*Taenopygia guttata*). Annual Meeting and Exhibition of the SICB (Society of Integrative and Comparative Biology), Portland, OR, January 3-7th, 2016.

INVITED SYMPOSIA AND PRESENTATIONS

Owen-Ashley, N. T. and Butler, L. K. 2004. Are endocrinological “rules of thumb” sufficient to

explain the movement of a *Dendroica* warbler hybrid zone? E-bird ESF/NSF/NSERC workshop. Tradeoffs and constraints. Groningen, Netherlands.

Owen-Ashley, N. T. and J. C. Wingfield. 2006. Acute phase responses of passerines: characterization and life history modulation. International Ornithological Congress, Hamburg, Germany.

Ashley, N.T., T., Ubuka, G. E. Bentley, and C. L. Buck. 2010. Circadian organization of arctic-breeding songbirds. International Ornithological Congress, Campus do Jordão, Brazil.

Ashley, N.T. 2011. Testosterone-induced immunosuppression in songbirds: trouble or triumph? North American Society for Comparative Endocrinology. University of Michigan, Ann Arbor, Michigan

Ashley, N. T. 2012. Endotoxemia and sleep: effects of day length. Ohio State University Medical Center Grand Rounds (Davis Heart and Lung Institute).

Ashley, N. T. 2015. The Vertebrate Inflammatory Response: Mediation by Life-History Tradeoffs. Departmental Seminar. Dept. of Biological Sciences, University of Alabama.

Ashley, N. T. 2015. The Vertebrate Inflammatory Response: Mediation by Life-History Tradeoffs. Departmental Seminar. Dept. of Biological Sciences, Northern Arizona University.

Ashley, N. T. Spring 2015. The Vertebrate Inflammatory Response: The Good, The Bad, And the Ugly. Center for the Integrative Study of Animal Behavior. Indiana University, Bloomington, IN.

STUDENTS MENTORED

Erica Plummer (undergraduate, Western Kentucky University, Bowling Green, Kentucky)
Dominique Thayer (undergraduate, Western Kentucky University, Bowling Green, Kentucky)
Laken Cooper (master's student, Western Kentucky University, Bowling Green, Kentucky)
Liz Carlton (Ph.D. candidate, Indiana University, Bloomington, Indiana)
Jennie Dumaine (master's student, Western Kentucky University, Bowling Green, Kentucky)
Chase Knibbe (undergraduate, Western Kentucky University, Bowling Green, Kentucky)
Amber Bishop (undergraduate, Western Kentucky University, Bowling Green, Kentucky)
Callie Allison (undergraduate, Western Kentucky University, Bowling Green, Kentucky)
Kaitlyn Dotson (undergraduate, Western Kentucky University, Bowling Green, Kentucky)
Audrey Brown (undergraduate, Western Kentucky University, Bowling Green, Kentucky)
David Sams (undergraduate, Western Kentucky University, Bowling Green, Kentucky)
Dai Le Hieu Vo (undergraduate, Western Kentucky University, Bowling Green, Kentucky)
Johnny England (undergraduate, Western Kentucky University, Bowling Green, Kentucky)
Jamie Doctrow (undergraduate, Western Kentucky University, Bowling Green, Kentucky)
Ryne Armes (undergraduate, Western Kentucky University, Bowling Green, Kentucky)

Austin Smith (Gatton Academy student, Western Kentucky Univ., Bowling Green, Kentucky)
 Austin Huff (undergraduate, Western Kentucky University, Bowling Green, Kentucky)
 Kaley Coffey (undergraduate, Western Kentucky University, Bowling Green, Kentucky)
 Rebecca Lieberman (undergraduate, The Ohio State University, Columbus, Ohio)
 Allison Fruchey (undergraduate, The Ohio State University, Columbus, Ohio)
 Laura Prince (undergraduate, The Ohio State University, Columbus, Ohio)
 Tanvi Joshi (undergraduate, The Ohio State University, Columbus, Ohio)
 Michael Turner (undergraduate, University of Washington, Seattle)
 Quentin Hays (undergraduate, University of Washington, Seattle)
 Luke George (undergraduate, University of Alaska, Fairbanks)
 Amelia Stankiewicz (undergraduate, University of Alaska, Fairbanks)
 Vera Simmonds (undergraduate, Alaska Pacific University)
 Katie Akpik (high school student, Barrow High School)
 Brady Salli (undergraduate, University of Alaska, Anchorage)
 Gunnar Carroll (high school student, Barrow High School)
 Trace Hudson (high school student, Barrow High School)

TEACHING EXPERIENCE

Full Courses

Vertebrate Endocrinology, Western Kentucky University (2)	2013, 2015
Human Anatomy & Physiology, Western Kentucky University (4)	2012-2014
Ornithology, Western Kentucky University	2015
Animal Biology & Diversity, Western Kentucky University	2016

Teaching assistantships

Introductory Physiology, University of Washington	1998, 2002
Vertebrate Zoology, University of Washington	1999
Comparative Vertebrate Anatomy, University of Washington	1999, 2002

Guest Lectures

Immunology, Western Kentucky University	2014
Comparative Vertebrate Endocrinology, University of Washington	2000, 2001
Vertebrate Zoology, University of Washington	1999, 2000

AD HOC REVIEWER

Israeli Science Foundation, referee, 2012, 2013
 NSF referee, 2011
 NSF pre-proposal Panel (Modulation I)- 2016
 American Journal of Physiology: Endocrinology & Metabolism
 American Journal of Physiology: Regulatory, Integrative, and Comparative Biology
 Animal Behaviour
 Arctic
 Auk (4)
 Behavioral Ecology and Sociobiology
 Biology Letters (2)

Brain, Behavior, and Immunity (15)
General and Comparative Endocrinology (20)
Evolutionary Ecology
Evolutionary Ecology Reviews
Evolution, Medicine, and Public Health
Frontiers in Neuroendocrinology
Functional Ecology (2)
Hormones & Behavior (12)
International Journal of Developmental Neuroscience
Journal of Avian Biology (2)
Journal of Comparative Physiology, Part B
Journal of Experimental Zoology, Part A (4)
Journal of Neuroendocrinology
Journal of Ornithology
Journal of Thermal Biology
Neuroimmunomodulation (2)
Oecologia
Ornitologia Neotropical
Physiology & Behavior (4)
Psychoneuroimmunology (5)
Proceedings of the Royal Society of London, B (7)
Science (2014 reviewer)
The American Naturalist (3)
The Condor (3)
Journal of Experimental Biology

EDITORSHIPS

Hormones & Behavior (Guest Editor)- 2016

PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science
American Ornithologists' Union
Cooper Ornithological Society
Sleep Research Society
Society for Integrative and Comparative Biology
Society for Behavioral Neuroendocrinology
Psychoneuroimmunology Research Society

COLLABORATORS

Barboza, Perry (University of Alaska, Fairbanks); Bentley, George (University of California, Berkeley); Buck, Loren (University of Anchorage, Alaska); Butler, Luke (College of New Jersey); Cattet, Marc (University of Saskatchewan, Canada); Hahn, Thomas (University of

California, Davis); Hasselquist, Dennis (Lund University, Sweden); Janz, David (University of Saskatchewan, Canada); Nelson, Randy (Ohio State University); Råberg, Lars (Lund University, Sweden); O'Hara Bruce (University of Kentucky); Person, Brian (North Slope Borough); Rosa, Cheryl (North Slope Borough); Ubuka, Takayoshi (University of Tokyo); Wasser, Sam (University of Washington, Seattle); Weil, Zachary (Ohio State University); Wingfield, John (University of California, Davis);

REFERENCES:

- 1.) Dr. John C. Wingfield
Professor
Dept. of Neurobiology, Physiology, and Behavior
One Shields Ave.
University of California, Davis
Davis, CA 95616
E-mail: jcwingfield@gmail.com

Dr. Wingfield was my primary advisor in graduate school at the University of Washington, Seattle.

- 2.) Dr. C. Loren Buck
Associate Professor
Dept. of Biological Sciences
3101 Science Cir
University of Alaska, Anchorage
Anchorage, AK 99508
E-mail: loren@uaa.alaska.edu

Dr. Buck was my primary sponsor for my NSF postdoctoral fellowship involving circadian rhythms in arctic-breeding songbirds.

- 3.) Dr. Randy J. Nelson
Brumbaugh Chair in Brain Research and Teaching
Professor and Chair
Department of Neuroscience
Ohio State University
4084 Graves Hall
333 West 10th Avenue
Columbus, OH 43210
E-mail: randy.nelson@osumc.edu

Dr. Nelson was my second post-doctoral advisor and we conducted research on seasonal changes in immune-sleep interactions in rodents.

- 4.) Dr. Bruce Schulte

Dept. Head of Biology
Department of Biology
Western Kentucky University
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Bowling Green, KY 42101
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Dr. Schulte is the Dept. head of the biology department at Western Kentucky University and serves on my mentoring committee.